Please cancel claims 1 to 11 without prejudice or disclaimer to the subject matter therein.

Please add the following new claims:

- --12. An isolated polynucleotide molecule that encodes a polypeptide selected from the group consisting of (a) a polypeptide comprising amino acid residues 48 to 78 of SEQ ID NO:2, (b) an allelic variant of (a), and (c) a splice variant of (a).
- 13. The isolated polynucleotide molecule of claim 12, wherein the polynucleotide molecule encodes a polypeptide comprising amino acid residues 48 to 78 of SEQ ID NO:2.
 - 14. The isolated polynucleotide molecule of claim 13, wherein the polynucleotide molecule comprises nucleotides 317 to 409 of SEQ ID NO:1.
 - 15. A composition comprising the isolated polynucleotide molecule of claim 13.
 - 16. The isolated polynucleotide molecule of claim 13, wherein the polynucleotide molecule is a DNA molecule.
 - 17. A vector, comprising the isolated polynucleotide molecule of claim 13.
- 18. The isolated polynucleotide molecule of claim 12, wherein the polynucleotide molecule encodes a polypeptide comprising amino acid residues 18 to 78 of SEQ ID NO:2.
 - 19. The isolated polynucleotide molecule of claim 18, wherein the polynucleotide molecule comprises nucleotides 227 to 409 of SEQ ID NO:1.
- 20. The isolated polynucleotide molecule of claim 12, wherein the polynucleotide molecule encodes a polypeptide comprising amino acid residues 18 to 385 of SEQ ID NO:2.

- 21. The isolated polynucleotide molecule of claim 20, wherein the polynucleotide molecule comprises nucleotides 227 to 1330 of SEQ ID NO:1.
- The isolated polynucleotide molecule of claim 12, wherein the polynucleotide molecule encodes a polypeptide comprising amino acid residues 1 to 385 of SEQ ID NO:2.
- 23. The isolated polynucleotide molecule of claim 22, wherein the polynucleotide molecule comprises nucleotides 176 to 1330 of SEQ ID NO:1.
- 24. An isolated polynucleotide molecule that encodes a protease activated receptor-4 polypeptide, wherein the polynucleotide molecule is obtainable by probing a lymphoma Daudi cell cDNA library with a hybridization probe comprising nucleotides 818 to 1391 of SEQ ID NO:1, and isolating cDNA that hybridizes with the hybridization probe to produce a polynucleotide encoding a transmembrane protein which, when expressed by a host cell, is activated by thrombin to stimulate phosphatidylinositol 4,5-diphosphate hydrolysis.
- 25. An isolated polynucleotide molecule that encodes the amino acid sequence of SEQ ID NO:7.
- 26. An isolated polynucleotide molecule that encodes a polypeptide comprising an amino acid sequence that is at least 90% identical to amino acid residues 18 to 78 of SEQ ID NO:2, wherein any difference between the amino acid sequence of the polypeptide and the amino acid sequence of amino acid residues 18 to 78 of SEQ ID NO:2 is due to one or more conservative amino acid substitutions.
- 27. An isolated polynucleotide molecule that encodes a polypeptide comprising a mutated form of amino acid residues 18 to 78 of SEQ ID NO:2, wherein the mutation is a substitution of an alanine residue for the arginine residue at position 47.
- 28. An isolated polynucleotide molecule comprising a nucleotide sequence that is complementary to the nucleotide sequence of SEO ID NO:1.
- 29. An expression vector, comprising a polynucleotide molecule that encodes a polypeptide comprising amino acid residues 18 to 78 of SEQ ID NO:2, a transcription promoter, and a transcription terminator, wherein the promoter is operably

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linked with the polynucleotide molecule, and wherein the polynucleotide molecule is operably linked with the transcription terminator.

- 30. The expression vector of claim 29, wherein the polynucleotide molecule encodes a polypeptide comprising amino acid residues 18 to 385 of SEQ ID NO:2.
- 31. A host cell comprising the expression vector of claim 29, wherein the host cell is selected from the group consisting of bacterium, yeast cell, fungal cell, insect cell, mammalian cell, and plant cell.
- 32. The host cell of claim 31, wherein the host cell is a bacterial host cell, which is either an *E. coli* cell or a *Bacillus* cell.
- 33. The host cell of claim 31, wherein the host cell is a fungal cell, which is either a *Saccharomyces* cell or a *Pichia* cell.
- 34. The host cell of claim 31, wherein the host cell is a mammalian cell.
- 35. The host cell of claim 34, wherein the mammalian cell is a human cell.
- 36. A method of using the expression vector of claim 29 to produce a protease activated receptor-4 polypeptide, the method comprising the act of culturing host cells that comprise the expression vector and that produce a protease activated receptor-4 polypeptide.
- 37. The method of claim 36, further comprising the act of isolating the protease activated receptor-4 from the cultured host cells.
 - 38. A virus, comprising the expression vector of claim 29.
- 39. A method of detecting a polynucleotide molecule encoding a protease activated receptor-4 polypeptide in a biological sample, comprising the steps of:
 - (a) contacting a polynucleotide probe under hybridizing conditions with either (i) test nucleic acid molecules isolated from the biological sample, or